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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/775,359	02/09/2004	Michael J. Miller	47254.5400	1183

7590 08/02/2007
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EXAMINER

DEICHMEISTER, NICHOLAS F

ART UNIT	PAPER NUMBER
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2616

MAIL DATE	DELIVERY MODE
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08/02/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/775,359	MILLER ET AL.	
	Examiner	Art Unit	
	Nick Deichmeister	2616	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 09 February 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-57 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-57 is/are rejected.
- 7) ☒ Claim(s) 6 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 09 February 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>2/9/2004</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Objections

1. Claim 6 is objected to because of the following informalities: claim recites, "...request access based a random back..." Typographical error presumed. **This error occurs elsewhere in the claims.** Appropriate correction is required.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.
3. **Claims 1, 14, 27, 30 and 32 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.**

Claims 1, 14, 27 and 30 recite, "said plurality of network nodes further comprises an access server," however; it is unclear which nodes specifically comprise said access server. Subsequent dependent claims imply an access server comprising one node; further fig. 1a (applicant's disclosure) shows a single node comprising an access server 140 among other network nodes 141 and 142.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

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A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1-5, 8-9, 14-18 and 21-22 are rejected under 35 U.S.C. 102(b) as being anticipated by Hogg et al (U.S. Patent No. 5,463,624).

Hogg et al discloses a bus arbitration method for telecommunications switching, comprising the following features:

Regarding claim 1, a system for requesting access to a network (col. 4, line 28, centralize bus arbitration method) comprising: a plurality of network nodes forming a network (fig. 1, interface modules 28 connected via bus lines 13); wherein said plurality of network nodes further comprises an access server (fig. 1, bus A arbiter 12c); wherein said network further comprises one or more active channels (col. 5, lines 48-51, slotted bus 13 and slotted bus 21) having a plurality of time slots (col. 5, lines 48-51, time slots); and wherein said network nodes request access (col. 15, lines 1-5, interface modules initiate requests on the request lines) from said access server (fig. 5a, REQn from module n to arbiter 102) for said one or more active channels (col. 15, lines 1-5, arbiter communicates grants; fig. 5a, slotted bus 104).

Regarding claim 2, wherein said network is a wired network (fig. 1, bus lines 13).

Regarding claim 3, wherein at least one of said network nodes requests access (col. 15, lines 1-5, interface modules initiate requests on the request lines) during a contention period (col. 13, lines 20-21, global contention resolution tournament).

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Regarding claim 4, wherein at least one of said network nodes requests access during said contention period (fig. 5d, one time slot 240) marked by a packet (fig. 5d, grant message 250).

Regarding claim 5, a queue identifier value (col. 9, lines 44-50, class of service level).

Regarding claim 8, wherein said network is a wired network (fig. 1, bus lines 13).

Regarding claim 9, wherein said queue identifier value consists of a high queue value (fig. 4, queue 66a) and a low queue value (fig. 4, queue 66d).

Regarding claim 14, a system for granting access to a network (col. 4, line 28, centralize bus arbitration method) comprising: a plurality of network nodes forming a network (fig. 1, interface modules 28 connected via bus lines 13); wherein said plurality of network nodes further comprises an access server (fig. 1, bus A arbiter 12c); wherein said network further comprises one or more active channels (col. 5, lines 48-51, slotted bus 13 and slotted bus 21) having a plurality of time slots (col. 5, lines 48-51, time slots); and wherein access to said one or more active channels (col. 15, lines 1-5, interface modules initiate requests on the request lines) is granted by said access server (fig. 5d, grant message 250).

Regarding claim 15, wherein said network is a wired network (fig. 1, bus lines 13).

Regarding claim 16, wherein said access server grants access (fig. 5d, grant message 250) after a contention period (fig. 5d, one time slot 240).

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Regarding claim 17, wherein said access server grants access (fig. 5d, grant message 250) after a contention period (fig. 5d, one time slot 240) marked by a packet (fig. 5d, grant message 250).

Regarding claim 18, a queue identifier value (col. 9, lines 44-50, class of service level).

Regarding claim 21, wherein said network is a wired network (fig. 1, bus lines 13).

Regarding claim 22, wherein said queue identifier value consists of a high queue value (fig. 4, queue 66a) and a low queue value (fig. 4, queue 66d).

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. **Claims 5 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hogg et al in view of Yoshida (U.S. Patent No. 5,570,365).**

Hogg et al discloses the claimed limitations as discussed in paragraph 5 above.

Hogg et al does not disclose the following features:

Regarding claim 5, a time to live value.

Regarding claim 18, a time to live value.

Yoshida discloses a LAN bridge using gate circuits for protecting high-priority packets from low-priority packet transmissions, comprising the following features:

Regarding claim 5, a time to live value (col. 3, lines 42-43, time-to-live field).

Regarding claim 18, a time to live value (col. 3, lines 42-43, time-to-live field).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the system of Hogg et al by adding the features, as taught by Yoshida, in order to provide prevention of transmission of unnecessary packets (Yoshida, col. 1, lines 65-67), saving bandwidth.

8. Claims 6 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hogg et al in view of Yoshida, as applied to claim 5 above, and further in view of Roehr (U.S. Patent No. 5,784,002).

Hogg et al and Yoshida disclose the claimed limitations as discussed above. Hogg et al and Yoshida do not disclose the following features:

Regarding claim 6, wherein at least one of said network nodes requests access based [on] a random back off contention algorithm.

Regarding claim 19, wherein said access server grants access based [on] a random back off contention algorithm.

Roehr discloses a low-power random digit generator, comprising the following features:

Regarding claim 6, wherein at least one of said network nodes requests access based [on] a random back off contention algorithm (col. 7, line 7, random back-off).

Regarding claim 19, wherein said access server grants access based [on] a random back off contention algorithm (col. 7, line 7, random back-off).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the system of Hogg et al and Yoshida by adding the features, as taught by Roehr, in order to provide allocation of an access time to a communications media for a communications device while consuming minimal quantities of power and requiring few additional electronic devices (Roehr, col. 2, lines 48-54).

9. Claims 7 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hogg et al in view of Yoshida, as applied to claim 5 above, and further in view of Cidon et al (U.S. Patent No. 5,051,985).

Hogg et al and Yoshida disclose the claimed limitations as discussed above. Hogg et al and Yoshida do not disclose the following features:

Regarding claim 7, wherein said network nodes request access based on a logical ring access algorithm.

Regarding claim 20, wherein said access server grants access based on a logical ring access algorithm.

Cidon et al discloses contention resolution in a communications ring, comprising the following features:

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Regarding claim 7, wherein said network nodes request access based on a logical ring access algorithm (fig. 1, nodes x, y and z interconnected by ring 12).

Regarding claim 20, wherein said access server grants access based on a logical ring access algorithm (fig. 1, nodes x, y and z interconnected by ring 12).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the system of Hogg et al and Yoshida by adding the features, as taught by Cidon et al, in order to provide a cost effective high speed communications network for transmitting packetized voice and data (Cidon et al, col. 3, lines 1-6).

10. Claims 10 and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hogg et al in view of Yoshida, as applied to claim 5 above, and further in view of Eames et al (U.S. Patent No. 5,850,400).

Hogg et al and Yoshida disclose the claimed limitations as discussed above. Hogg et al and Yoshida do not disclose the following features:

Regarding claims 10 and 23, wherein said queue priority value has a range of 0 to 15.

Eames et al discloses a system, method, and apparatus for bidirectional transport of data between a digital network and a plurality of devices, comprising the following features:

Regarding claims 10 and 23, wherein said queue priority value has a range of 0 to 15 (col. 7, lines 22-24, GRANT field is a four-bit field). The examiner notes that a four-bit field has the range 0-15.

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the system of Hogg et al and Yoshida by adding the features, as taught by Eames et al, in order to provide minimal delay of signals (col. 2, lines 15-19).

11. Claims 11-12 and 24-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hogg et al in view of Yoshida, as applied to claim 5 above, and further in view of Mazzola et al (U.S. Patent No. 5,796,732).

Hogg et al and Yoshida disclose the claimed limitations as discussed above. Hogg et al and Yoshida do not disclose the following features:

Regarding claims 11-12 and 24-25, a range from 0 to 1024.

Mazzola et al discloses an architecture for an expandable transaction-based switching bus, comprising the following features:

Regarding claims 11-12 and 24-25, a range from 0 to 1024 (col. 6, line 29, 10-bit value). The examiner notes that a ten-bit field has the range 0-1024.

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the system of Hogg et al and Yoshida by adding the features, as taught by Mazzola et al, in order to provide improved efficiency of a switch (Mazzola et al, abstract, lines 8-12).

12. Claims 13 and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hogg et al in view of Yoshida, as applied to claim 5 above, and further in view of Lao et al (U.S. Patent No. 6,356,561 B1).

Hogg et al and Yoshida disclose the claimed limitations as discussed above.

Hogg et al further discloses the following features:

Regarding claim 13, re-requesting access (fig. 7a, loop structure connecting request checking step 71 to subsequent steps).

Regarding claim 26, re-granting access (fig. 8e, loop structure connecting transmitting the grant step 121 to checking step 119).

Hogg et al and Yoshida do not disclose the following features:

Regarding claim 13, upper layer packet reassembly.

Regarding claim 26, upper layer packet reassembly.

Lao et al discloses a method and apparatus for the fair and efficient transfer of variable length packets using fixed length segments, comprising the following features:

Regarding claim 13, upper layer packet reassembly (col. 2, lines 17-18, cells reassembled into packets).

Regarding claim 26, upper layer packet reassembly (col. 2, lines 17-18, cells reassembled into packets).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the system of Hogg et al and Yoshida by adding the features, as taught by Lao et al, in order to provide maximum throughput regardless of packet length (Lao et al, col. 2, lines 57-59).

13. Claims 27 and 29-31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hogg et al in view of Vernon et al (U.S. Patent No. 5,088,024).

Hogg et al discloses a bus arbitration method for telecommunications switching, comprising the following features:

Regarding claim 27, a plurality of network nodes forming a network (fig. 1, interface modules 28 connected via bus lines 13); wherein said plurality of network nodes further comprises an access server (fig. 1, bus A arbiter 12c); wherein said network further comprises one or more active channels (col. 5, lines 48-51, slotted bus 13 and slotted bus 21) having a plurality of time slots (col. 5, lines 48-51, time slots).

Regarding claim 29, wherein said network is a wired network (fig. 1, bus lines 13).

Regarding claim 30, a system for access server arbitration on a network comprising: a plurality of network nodes forming a network; wherein said plurality of network nodes further comprises an access server; wherein said network further comprises one or more active channels having a plurality of time slots.

Regarding claim 31, wherein said network is a wired network (fig. 1, bus lines 13).

Hogg et al does not disclose the following features:

Regarding claim 27, access server relinquishing on a network, and relinquishing access mastership based on lack of access requests on said one or more channels.

Regarding claim 30, wherein at least one of said network nodes becomes said access server based on an idle period and a lack of response to access requests.

Vernon et al discloses a round-robin protocol method for arbitrating access to a shared bus arbitration providing preference to lower priority units after bus access by a higher priority unit, comprising the following features:

Regarding claim 27, access server relinquishing on a network (col. 4, lines 60-65, a number greater than the greatest identity is recorded as the winning identity), and relinquishing access mastership based on lack of access requests (col. 4, lines 60-65, if no agents compete) on said one or more channels.

Regarding claim 30, wherein at least one of said network nodes becomes said access server (col. 3, line 44, acquiring the bus) based on an idle period (col. 3 line 48, fairness release operation) and a lack of response to access requests (col. 3, line 50, no outstanding requests).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the system of Hogg et al by adding the features, as taught by Vernon et al, in order to inexpensively provide fairness (Vernon et al, col. 4, lines 18-25).

14. Claim 28 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hogg et al in view of Vernon et al as applied to claim 27 above, and further in view of Ishibashi et al (U.S. Patent No. 5,333,134).

Hogg et al and Vernon et al disclose the claimed limitation as discussed above. Hogg et al and Vernon et al do not disclose the following features:

Regarding claim 28, wherein said access server notifies said network nodes of relinquishing access by sending out a packet.

Ishibashi et al discloses a connection hold control system, comprising the following features:

Regarding claim 28, wherein said access server notifies said network nodes of relinquishing access (fig. 4, connection release acknowledge signal from node 21 to node 31) by sending out a packet (fig 3, cells from TA#1 to TA#2).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the system of Hogg et al by adding the features, as taught by Vernon et al, in order to provide improved data transmission efficiency (Ishibashi, col. 4, lines 18-21).

15. Claims 32-33, 35-36 and 39 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hogg et al in view of Koorpaty et al (U.S. Patent No. 6,628,945 B1).

Hogg et al discloses a bus arbitration method for telecommunications switching, comprising the following features:

Regarding claim 32, a method for requesting access to a network (col. 4, line 28, centralize bus arbitration method) comprising: sending an access request (col. 15, lines 1-5, interface modules initiate requests on the request lines) on any active channel (col. 5, lines 48-51, slotted bus 13 and slotted bus 21) to an access server (fig. 5a, REQn from module n to arbiter 102) on a time division multiplexed network (fig. 2b, allocation

of time slots) which has a plurality of time slots (fig. 2b, allocation of time slots) wherein one or more of said time slots are grouped together to form said active channel (col. 7, lines 16-24, allocate dynamically the plurality of time slots on the slotted bus between bus overlays).

Regarding claim 33, a wired network (fig. 1, bus lines 13).

Regarding claim 35, sending an access request (col. 15, lines 1-5, interface modules initiate requests on the request lines) during a contention period (col. 13, lines 20-21, global contention resolution tournament).

Regarding claim 36, sending an access request (col. 15, lines 1-5, interface modules initiate requests on the request lines) during a contention period (col. 13, lines 20-21, global contention resolution tournament) marked by a packet (fig. 5d, grant message 250).

Regarding claim 39, a wired network (fig. 1, bus lines 13).

Hogg et al does not disclose the following features:

Regarding claim 32, access request packets, and building an access request packet to request access.

Koorpaty et al discloses a connection hold control system, comprising the following features:

Regarding claim 32, access request packets (fig. 8 access request packet 810), and building an access request packet (col. 9 lines 66-67, constructing access request bursts) to request access (col. 10, line 6, access request).

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It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the system of Hogg et al by adding the features, as taught by Koorpaty et al, in order to provide access to a wireless communications system under disadvantaged radio conditions (Koorpaty et al, col. 4, lines 50-53).

16. Claim 34 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hogg et al in view of Koorpaty et al as applied to claim 32 above, and further in view of Yoshida.

Hogg et al and Koorpaty et al disclose the claimed limitations as discussed above. Hogg et al and Koorpaty et al do not disclose the following features:

Regarding claim 34, a time to live value.

Yoshida discloses a LAN bridge using gate circuits for protecting high-priority packets from low-priority packet transmissions, comprising the following features:

Regarding claim 34, a time to live value (col. 3, lines 42-43, time-to-live field).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the system of Hogg et al and Koorpaty et al by adding the features, as taught by Yoshida, in order to provide prevention of transmission of unnecessary packets (Yoshida, col. 1, lines 65-67), saving bandwidth.

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17. Claim 37 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hogg et al and Koorpaty et al as applied to claim 35 above, and further in view of Roehr.

Hogg et al and Koorpaty et al disclose the claimed limitations as discussed above. Hogg et al and Koorpaty et al do not disclose the following features:

Regarding claim 37, a random back off contention algorithm.

Roehr discloses a low-power random digit generator, comprising the following features:

Regarding claim 37, a random back off contention algorithm (col. 7, line 7, random back-off).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the system of Hogg et al and Koorpaty et al by adding the features, as taught by Roehr, in order to provide allocation of an access time to a communications media for a communications device while consuming minimal quantities of power and requiring few additional electronic devices (Roehr, col. 2, lines 48-54).

18. Claim 38 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hogg et al and Koorpaty et al as applied to claim 35 above, and further in view of Cidon et al.

Hogg et al and Koorpaty et al disclose the claimed limitations as discussed above. Hogg et al and Koorpaty et al do not disclose the following features:

Regarding claim 38, a logical ring access algorithm.

Cidon et al discloses contention resolution in a communications ring, comprising the following features:

Regarding claim 38, a logical ring access algorithm (fig. 1, nodes x, y and z interconnected by ring 12).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the system of Hogg et al and Koorpaty et al by adding the features, as taught by Cidon et al, in order to provide a cost effective high speed communications network for transmitting packetized voice and data (Cidon et al, col. 3, lines 1-6).

19. Claim 40 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hogg et al in view of Koorpaty et al as applied to claim 32 above, and further in view of Lao et al.

Hogg et al and Koorpaty et al disclose the claimed limitations as discussed above.

Hogg et al further discloses the following features:

Regarding claim 40, re-requesting access (fig. 7a, loop structure connecting request checking step 71 to subsequent steps).

Hogg et al and Koorpaty et al do not disclose the following features:

Regarding claim 40, upper layer packet reassembly.

Lao et al discloses a method and apparatus for the fair and efficient transfer of variable length packets using fixed length segments, comprising the following features:

Regarding claim 40, upper layer packet reassembly (col. 2, lines 17-18, cells reassembled into packets).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the system of Hogg et al and Koorpaty et al by adding the features, as taught by Lao et al, in order to provide maximum throughput regardless of packet length (Lao et al, col. 2, lines 57-59).

20. Claims 41-45 and 48 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hogg et al in view of Ishibashi et al.

Hogg et al discloses a bus arbitration method for telecommunications switching, comprising the following features:

Regarding claim 41, a method for granting access to a network (col. 4, line 28, centralize bus arbitration method) comprising: receiving an access request (fig. 1, bus A arbiter 12c receiving request A) on a time division multiplexed network (fig. 2b, time slots 42; col. 5, lines 48-51, time slots) which has a plurality of time slots (col. 5, lines 48-51, time slots) wherein one or more of said time slots are grouped together to form an active channel (col. 7, lines 16-24, allocate dynamically the plurality of time slots on the slotted bus between bus overlays), wherein said access request is received by an access server (fig. 1, bus A arbiter 12c receiving request A) on said active channel (fig.

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1, line carrying request A) from a network node (fig. 1, line carrying request A originates at interface module 28l); and sending an access grant packet (fig. 5d, grant message 250) on said active channel to said network node (col. 16, lines 17-33, grant message may be transmitted) which grants access to said active channel (col. 16, line 27, request being granted).

Regarding claim 42, a wired network (fig. 1, bus lines 13).

Regarding claim 43, a queue identifier value (col. 9, lines 44-50, class of service level).

Regarding claim 44, wherein receiving of said access request packet further comprises receiving said access request packet during a contention period (col. 13, lines 20-21, global contention resolution tournament).

Regarding claim 45, wherein receiving of said access request packet further comprises receiving said access request packet during a contention period (fig. 5d, one time slot 240) marked by a packet (fig. 5d, grant message 250).

Regarding claim 48, a wired network (fig. 1, bus lines 13).

Hogg et al does not disclose the following features:

Regarding claim 41, an access request packet.

Ishibashi et al discloses a connection hold control system, comprising the following features:

Regarding claim 41, an access request packet (fig. 8 access request packet 810).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the system of Hogg et al by adding the features, as taught by Ishibashi et al, in order to provide improved data transmission efficiency (Ishibashi, col. 4, lines 18-21).

21. Claim 46 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hogg et al in view of Ishibashi et al, and further in view of Roehr.

Hog et al and Ishibashi et al disclose the claimed limitations as discussed above. Hogg et al and Ishibashi et al do not disclose the following features:

Regarding claim 46, wherein receiving of said access request packet further comprises receiving of said access request packet based [on] a random back off contention algorithm.

Roehr discloses a low-power random digit generator, comprising the following features:

Regarding claim 46, wherein receiving of said access request packet further comprises receiving of said access request packet based [on] a random back off contention algorithm (col. 7, line 7, random back-off).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the system of Hogg et al and Ishibashi et al by adding the features, as taught by Roehr, in order to provide allocation of an access time to a communications media for a communications device while consuming minimal

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quantities of power and requiring few additional electronic devices (Roehr, col. 2, lines 48-54).

22. Claim 47 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hogg et al and Ishibashi et al and Roehr, and further in view of Cidon et al.

Hog et al, Ishibashi et al and Roehr disclose the claimed limitations as discussed above. Hogg et al, Ishibashi et al and Roehr do not disclose the following features:

Regarding claim 47, wherein receiving of said access request packet further comprises receiving of said access request packet based on a logical ring access algorithm.

Cidon et al discloses contention resolution in a communications ring, comprising the following features:

Regarding claim 47, wherein receiving of said access request packet further comprises receiving of said access request packet based on a logical ring access algorithm (fig. 1, nodes x, y and z interconnected by ring 12).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the system of Hogg et al, Ishibashi et al and Roehr by adding the features, as taught by Cidon et al, in order to provide a cost effective high speed communications network for transmitting packetized voice and data (Cidon et al, col. 3, lines 1-6).

23. Claim 49 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hogg et al in view of Ishibashi et al, and further in view of Lao et al.

Hog et al and Ishibashi et al disclose the claimed limitations as discussed above. Hogg et al and Ishibashi et al do not disclose the following features:

Regarding claim 49, upper layer packet reassembly.

Lao et al discloses a method and apparatus for the fair and efficient transfer of variable length packets using fixed length segments, comprising the following features:

Regarding claim 49, upper layer packet reassembly (col. 2, lines 17-18, cells reassembled into packets).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the system of Hogg et al and Ishibashi et al by adding the features, as taught by Lao et al, in order to provide maximum throughput regardless of packet length (Lao et al, col. 2, lines 57-59).

24. Claims 50-57 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hogg et al in view of Vernon et al and Ishibashi et al.

Hogg et al discloses a bus arbitration method for telecommunications switching, comprising the following features:

Regarding claim 50, monitoring an active channel (col. 18, lines 53-55, grant bus is continuously monitored) on a time division multiplexed network (fig. 2b, allocation of time slots) which has a plurality of time slots (fig. 2b, allocation of time slots) wherein

one or more of said time slots are grouped together to form said active channel (col. 7, lines 16-24, allocate dynamically the plurality of time slots on the slotted bus between bus overlays) and wherein an access server (fig. 1, bus A arbiter 12c) monitors (col. 15, lines 2-3, arbiter gathers requests) for one or more access requests (col. 15, line 3, requests) from one or more network nodes (col. 15, line 4, interface modules).

Regarding claim 53, a wired network (fig. 1, bus lines 13).

Regarding claim 54, a method for access server arbitration on a network (col. 4, line 28, centralize bus arbitration method) comprising: a time division multiplexed network (fig. 2b, time slots 42; col. 5, lines 48-51, time slots) which has a plurality of time slots (col. 5, lines 48-51, time slots) wherein one or more of said time slots are grouped together to form said active channel (col. 7, lines 16-24, allocate dynamically the plurality of time slots on the slotted bus between bus overlays); and becoming an access server (col. 16, lines 29-31, interface module associated with the selected request being granted) based [on] seeing an idle period (col. 13, lines 40-45, cumulative age value for each of these possible requests) and on the number of access responses received in response (col. 13, lines 25-30, total number of pending requests) to said one or more access requests.

Regarding claim 56, a contention resolution mechanism (col. 13, lines 49-53, a request is selected at random).

Regarding claim 57, a wired network (fig. 1, bus lines 13).

Hogg et al does not disclose the following features:

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Regarding claim 50, access server relinquishing on a network, and relinquishing access mastership based [on] the number of access request packets seen during one or more contention period; and access request packets.

Regarding claim 51, wherein relinquishing access mastership further comprises seeing zero access requests during one or more contention periods.

Regarding claim 52, further comprising the step of sending out a packet to indicate to said one or more network nodes the relinquishing of access mastership.

Regarding claim 54, sending one or more access request packets.

Regarding claim 55, wherein becoming said access server further comprises becoming said access server based on seeing zero access response packets.

Vernon et al discloses a round-robin protocol method for arbitrating access to a shared bus arbitration providing preference to lower priority units after bus access by a higher priority unit, comprising the following features:

Regarding claim 50, access server relinquishing on a network (col. 4, lines 60-65, a number greater than the greatest identity is recorded as the winning identity), and relinquishing access mastership (col. 4, lines 60-65, if no agents compete) based [on] the number of access requests (col. 4, lines 60-65, if no agents compete) seen during one or more contention period.

Regarding claim 51, wherein relinquishing access mastership further comprises seeing zero access requests (col. 4, lines 60-65, if no agents compete) during one or more contention periods.

Regarding claim 55, wherein becoming said access server further comprises becoming said access server (col. 4, lines 60-65, a number greater than the greatest identity is recorded as the winning identity) based on seeing zero access response packets (col. 4, lines 60-65, if no agents compete).

Vernon et al does not disclose the following features:

Regarding claims 50 and 51, access request packets.

Regarding claim 52, further comprising the step of sending out a packet to indicate to said one or more network nodes the relinquishing of access mastership.

Regarding claim 54, sending one or more access request packets.

Ishibashi et al discloses a connection hold control system, comprising the following features:

Regarding claims 50 and 51, access request packets (fig. 8 access request packet 810).

Regarding claim 52, further comprising the step of sending out a packet (fig 3, cells from TA#1 to TA#2) to indicate to say one or more network nodes the relinquishing of access mastership (fig. 4, connection release acknowledge signal from node 21 to node 31).

Regarding claim 54, sending (fig 3, cells from TA#1 to TA#2) one or more access request packets (fig. 8 access request packet 810).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the system of Hogg et al by adding the features, as taught by Vernon et al and Ishibashi et al, in order to inexpensively provide fairness (Vernon et al,

col. 4, lines 18-25) and improved data transmission efficiency (Ishibashi, col. 4, lines 18-21), respectively.

Conclusion

25. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Lee et al (U.S. Patent No. 5,909,444) discloses a system, device, and method for aggregating users in a shared-medium network. Nagata et al (U.S. Patent No. 6,680,950 B1) discloses a collision avoidance technique for a multiple access radio communication system. Bohm et al (U.S. Patent No. 5,982,780) discloses a resource management scheme and arrangement. Zeller et al (U.S. Patent No. 5,555,425) discloses a multi-master bus arbitration system in which the address and data lines of the bus may be separately granted to individual masters. Kang et al (U.S. Patent No. 5,845,097) discloses bus recovery apparatus and method of recovery in a multi-master bus system. Kondo (U.S. Patent No. 5,748,624) discloses a method of time-slot allocation in a TDMA communication system. Eberle et al (U.S. Patent Application Publication No. 2003/0156597 A1) discloses a method and apparatus for speculative arbitration.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nick Deichmeister whose telephone number is (571) 272-9746. The examiner can normally be reached on Monday through Friday (off alternate Fridays).

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kwang Yao can be reached on (571) 272-3182. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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KWANG BIN YAO
SUPERVISORY PATENT EXAMINER

A handwritten signature in black ink, appearing to read 'Kwang Bin Yao', is written over the printed name and title.

NFD